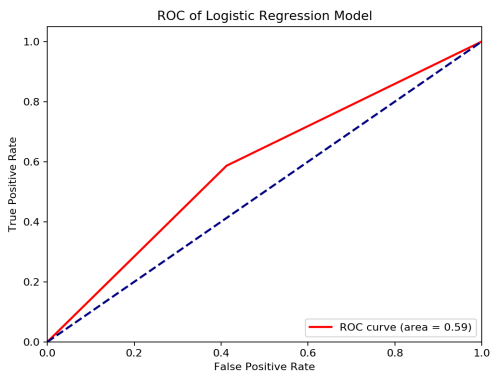
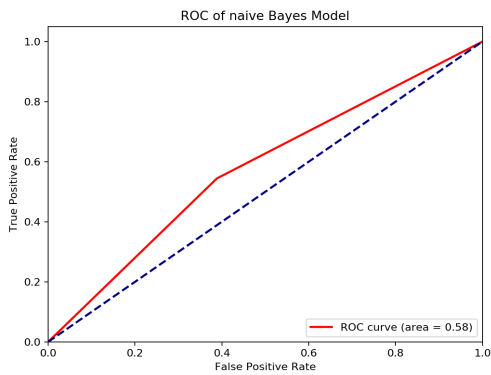
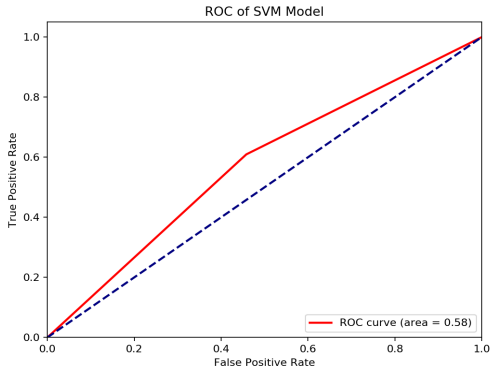
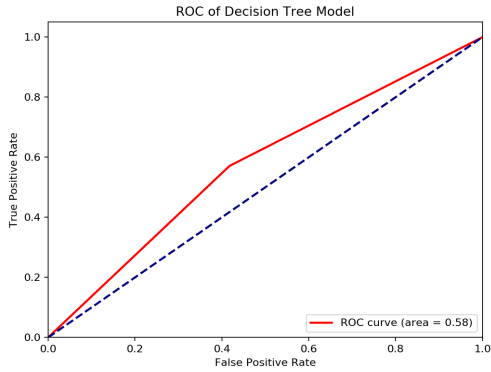
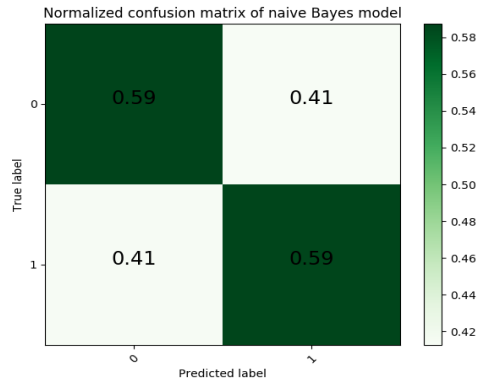
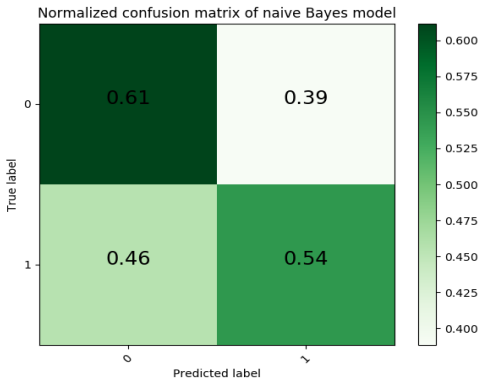
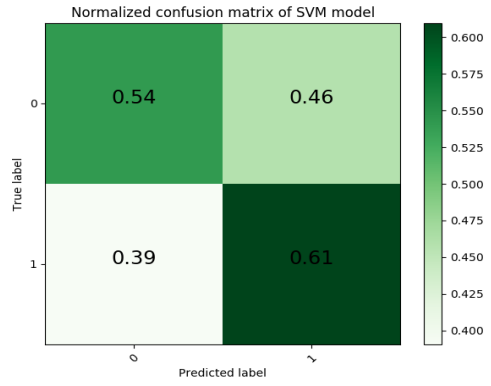
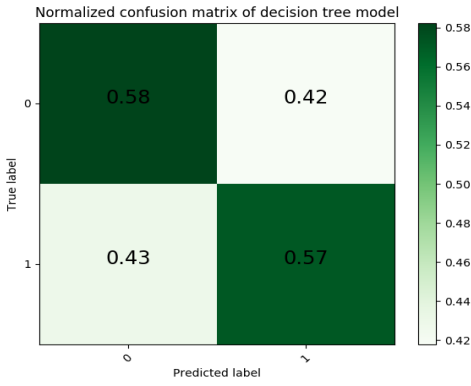


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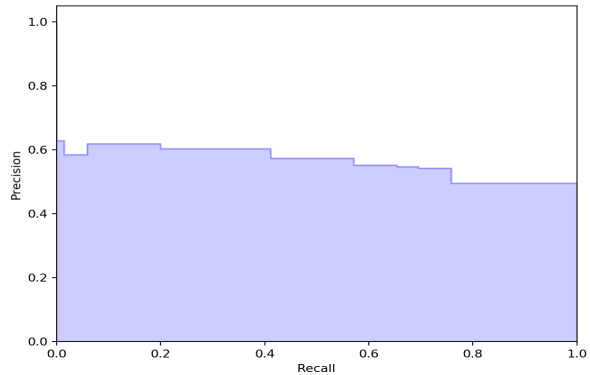
1 MultiMagazine/MultiMagazine.py
2 <class 'pandas.core.frame.DataFrame'>
3 RangeIndex: 10174 entries, 0 to 10173
4 Data columns (total 10 columns):
5 income            10174 non-null int64
6 firstDate         10174 non-null int64
7 lastDate          10174 non-null int64
8 amount            10174 non-null float64
9 freqSales         10174 non-null int64
10 saleSizeCode     10174 non-null object
11 starCustomer     10174 non-null object
12 lastSale         10174 non-null int64
13 avrSale          10174 non-null float64
14 class            10174 non-null int64
15 dtypes: float64(2), int64(6), object(2)
16 memory usage: 794.9+ KB
17      income      amount  freqSales  saleSizeCode
18 starCustomer \
19 income      1.000000 -0.121602 -0.063828      0.083139      -0.
   053863
19 amount      -0.121602  1.000000  0.564149      -0.571064      0.
   592312
20 freqSales   -0.063828  0.564149  1.000000      -0.572901      0.
   336401
21 saleSizeCode 0.083139 -0.571064 -0.572901      1.000000      -0.
   386052
22 starCustomer -0.053863  0.592312  0.336401      -0.386052      1.
   000000
23 lastSale     0.055742 -0.351860 -0.375856      0.618889      -0.
   220898
24 avrSale      0.071388 -0.443678 -0.374563      0.619940      -0.
   321925
25 class        0.012439  0.151074  0.158478      -0.160280      0.
   144979
26 timeSpan     -0.036026  0.532571  0.126971      -0.270414      0.
   536040
27
28      lastSale  avrSale      class  timeSpan
29 income      0.055742  0.071388  0.012439 -0.036026
30 amount     -0.351860 -0.443678  0.151074  0.532571
31 freqSales  -0.375856 -0.374563  0.158478  0.126971
32 saleSizeCode 0.618889  0.619940 -0.160280 -0.270414
33 starCustomer -0.220898 -0.321925  0.144979  0.536040
34 lastSale    1.000000  0.795891 -0.106576 -0.128295
35 avrSale     0.795891  1.000000 -0.105595 -0.277654

```

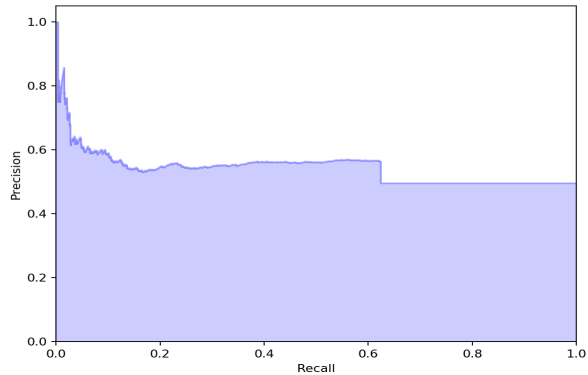
```
36 class      -0.106576 -0.105595  1.000000  0.092101
37 timeSpan    -0.128295 -0.277654  0.092101  1.000000
38 The accuracy score of the decision tree model is: 0.577.
39 The area under the ROC curve for decision tree model is: 0.595.
40 Normalized confusion matrix
41 [[ 0.58  0.42]
42 [ 0.43  0.57]]
43 The accuracy score of the SVM model is: 0.575.
44 The area under the ROC curve for SVM model is: 0.572.
45 Normalized confusion matrix
46 [[ 0.54  0.46]
47 [ 0.39  0.61]]
48 The accuracy score of the naive Bayes model is: 0.578.
49 The area under the ROC curve for naive Bayes model is: 0.613.
50 Normalized confusion matrix
51 [[ 0.61  0.39]
52 [ 0.46  0.54]]
53 The accuracy score of the logistic regression model is: 0.587.
54 The area under the ROC curve for logistic regression model is: 0.
  616.
55 Normalized confusion matrix
56 [[ 0.59  0.41]
57 [ 0.41  0.59]]
58
59 Process finished with exit code 0
60
```



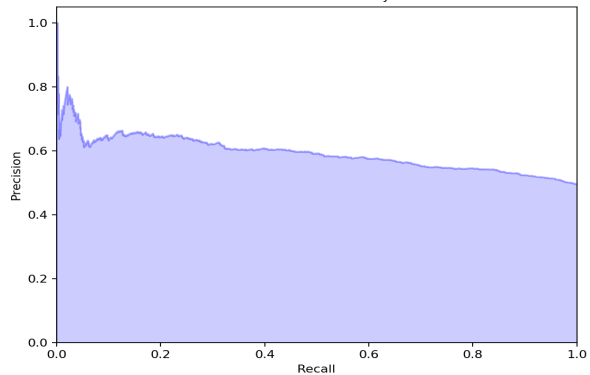
2-class Precision-Recall curve for decision tree model: AUC=0.58



2-class Precision-Recall curve for SVM model: AUC=0.56



2-class Precision-Recall curve for naive Bayes model: AUC=0.59



2-class Precision-Recall curve for logistic regression model: AUC=0.59

